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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,316	12/12/2001	John Hufferd	IL920000089US2	2909

7590 07/11/2006

IBM CORPORATION
INTELLECTUAL PROPERTY LAW DEPT.
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EXAMINER	
AHMED, SALMAN	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/015,316	HUFFERD ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 6/26/2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 12/12/2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-8 are pending.

Claims 1-8 are rejected.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sapuntzakis et al. (hereinafter referred to as Sapuntzakis) IETF draft TCP RDMA option draft-csapuntz-tcprdma-00.txt, Cisco Systems February 2000, in view of Brustoloni et al. (US PAT 6886103), hereinafter referred to as Brustoloni

In regards to claims 1 and 6, Sapuntzakis teaches a method/system/computer for transporting/receiving/transmitting data packets/ a multiplicity of data packets /data stream over a network the method comprising the steps of: attaching a data packet header to a data packet by a first transmitting processor, data packet header comprising: an internet protocol (IP) header; a remote direct memory access (RDMA) header; and a transmission control protocol (TCP) header; and transporting said data packets over network and receiving processor for receiving the data packets/ a multiplicity of data packets /data stream (Page 3, Introduction, page 4 lines 2-5 and page 5 section 3.1.2) the sender places the option on TCP segments containing RDMA data. The RDMA option describes to the receiver the location of the RDMA data in the TCP payload. Currently, doing remote DMA (RDMA) between processors over TCP protocols such as HTTP and NFS requires much processing on the client and server machines, especially at speeds of a gigabit or higher. The data offset specifies the number of bytes from the beginning of the TCP payload to the RDMA transfer data).

Sapuntzakis does not explicitly teach that RDMA header can be inserted between associated TCP and associated IP headers.

Brustoloni in the same field of endeavor teaches a data packet header (figure 2) comprising: an internet protocol (IP) header (figure 2, IP header), and a transmission control protocol (TCP) header (figure 2, TCP header), and IPSec defined protocols like the AH (Authentication Header) protocol (figure 2 element 202) and the ESP (Encapsulating Security Payload) protocol (figure 3 element 302) header inserted between TCP and IP header and transported using TCP/IP.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Sapuntzakis' system/method of transporting RDMA related header via TCP with Brustoloni's system/method of putting additional data headers between IP and TCP. The motivation is that putting RDMA header between TCP and IP headers will enable a process to get to RDMA related information quickly and efficiently without decoding TCP header; thus making the network to process information faster.

In regards to claim 2, Sapuntzakis teaches (page 13, section 3.2.1, lines 1-5) on an HTTP/1.1 connection, the server sends back responses in the order it received requests. Thus, the index of the request, where the first request is index 0, is sufficient to disambiguate the RDMAs.

3. Claims 3-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sapuntzakis et al. (hereinafter referred to as Sapuntzakis) IETF draft TCP RDMA option draft-csapuntz-tcprdma-00.txt, Cisco Systems February 2000, in view of Brustoloni et al. (US PAT 6886103), hereinafter referred to as Brustoloni and further in view of Tsunoda (US PAT 6516435).

In regards to claims 3-5, 7 and 8, Sapuntzakis teaches a method/system/computer for transporting/receiving/transmitting data packets/ a multiplicity of data packets /data stream over a network the method comprising the steps of: attaching a data packet header to a data packet by a first transmitting processor, data packet header comprising: an internet protocol (IP) header; a remote

direct memory access (RDMA) header; and a transmission control protocol (TCP) header; and transporting said data packets over network and receiving processor for receiving the data packets/ a multiplicity of data packets /data stream (Page 3, Introduction, page 4 lines 2-5 and page 5 section 3.1.2) the sender places the option on TCP segments containing RDMA data. The RDMA option describes to the receiver the location of the RDMA data in the TCP payload. Currently, doing remote DMA (RDMA) between processors over TCP protocols such as HTTP and NFS requires much processing on the client and server machines, especially at speeds of a gigabit or higher. The data offset specifies the number of bytes from the beginning of the TCP payload to the RDMA transfer data).

Sapuntzakis does not explicitly teach that RDMA header can be inserted Between associated TCP and associated IP headers.

Brustoloni teaches a data packet header (figure 2) comprising: an internet protocol (IP) header (figure 2, IP header), and a transmission control protocol (TCP) header (figure 2, TCP header), and IPSec defined protocols like the AH (Authentication Header) protocol (figure 2 element 202) and the ESP (Encapsulating Security Payload) protocol (figure 3 element 302) header inserted between TCP and IP header and transported using TCP/IP.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Sapuntzakis' system/method of transporting RDMA related header via TCP with Brustoloni's system/method of putting additional data headers between IP and TCP. The motivation is that putting RDMA header between

TCP and IP headers will enable a process to get to RDMA related information quickly and efficiently without decoding TCP header; thus making the network to process information faster.

In regards to claims 3, 4, 5, 7 and 8 Sapuntzakis and Brustoloni teach sending RDMA header in between IP and TCP headers as described above.

In regards to claims 3, 4, 5, 7 and 8 Sapuntzakis and Brustoloni do not explicitly teach at least two of the data packets contain the TCP, IP and RDMA headers and at least two of data packets is each data packet in the stream.

Tsunoda in the same field of endeavor teaches sending redundant (column 21 lines 40-41, m pieces of information packets and the k pieces of redundant packets are transmitted) packets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sapuntzakis and Brustoloni's system/method by incorporating the step of sending redundant packets as taught by Tsunoda. The motivation is that (as taught by Tsunoda, column 3 lines 27-30) Tsundoa's teaching provides an error correction scheme, which can produce redundant packets; thus making the network reliable.

Response to Arguments

4. Applicant's arguments see page 5 of the Remarks section, filed 6/26/2006, with respect to the 35 U.S.C. 101 rejections of claims 1, 3, 5, 7 and 8 have been fully considered and are persuasive. The 35 U.S.C. 101 rejections to the claims have been withdrawn.

Further review of the references by the Examiner necessitated new grounds of rejection presented in this office action. As such claims 1-8 stands rejected based on the review.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit 2616

SA
7/5/2006

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